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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/440,102	11/15/1999	AUSTIN L. HUANG	BWD:7156.053	2533

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CHERNOFF VILHAUER  
MCCLUNG & STENZEL LLP  
600 BENJ FRANKLIN PLAZA 1600 ODS TOWER  
601 S W SECOND AVENUE  
PORTLAND, OR 972043157

EXAMINER

DUONG, TAI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/440,102

Applicant(s)

HUANG, AUSTIN L.

Examiner

Tai Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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The rejections over Chigrinov et al are withdrawn in view of Applicant's amendments to the claims and remarks.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not disclose the features "at least one liquid crystal panel for generating an image, and which together with said polarizer, acts to polarize light from said light source generally into a uniaxial orientation", "where said birefringence of each respective region is based on the variance of the polarization of said incident light on the incident face of said respective region from said uniaxial orientation, where said birefringence reduces said variance" of *claim 1*, and the features "providing light generally polarized in a uniaxial orientation", "determining a variance, from said uniaxial orientation, of the polarization of light at a first location and a second location of said image", "reducing said variance at said first and second locations where said reduction at said first location is different than said reduction at said second location" of *claim 17*.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Without antecedent basis in the specification, it is unclear whether the feature "at least one liquid crystal panel for generating an image, and which together with said polarizer, acts to polarize light from said light source generally into a uniaxial orientation" of *claim 1* is correct or the feature "providing light generally polarized in a uniaxial orientation" of *claim 17* is correct. Claim 1 recites that the combination of the polarizer and the liquid crystal panel provides light polarized into a uniaxial orientation while claim 17 implies that the polarizer alone provides light polarized into a uniaxial orientation (step (a)). In claim 1, the recited feature "where said birefringence of each respective region *is based on the variance of the polarization of said incident light on the incident face of said respective region from said uniaxial orientation* " is not understood. Claim 17 is not consistent with the specification and the drawings because it is unclear which elements of which figures have the functions of "determining a variance, from said uniaxial orientation, of the polarization of light at a first location and a second location of said image". The remaining claims are also rejected since they depend on the indefinite claims.

Claims 1, 3, 4, 7, 11, 15, 17, 18, 20, 21, 24 and 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Iba.

Note Figs. 13-15 which disclose a method and a projection display system, similar to those of the instant claims, comprising a light source (1 in), one polarizer 10, one liquid crystal panel (12-14), a projection source 52, a polarization

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compensator 55, and an analyzer 15 (col. 11, line 15 - col. 12, line 22). The only differences between Iba's system and method and those of the instant claims are the features "said birefringence of each respective region is based on the variance of the polarization of said incident light on the incident face of said respective region from said uniaxial orientation" and "determining a variance, from said uniaxial orientation, of the polarization of light at a first location and a second location of said image and reducing said variance at said first and second locations where said reduction at said first location is different than said reduction at said second location". However, such features are inherently associated with Iba's system and method because Figs. 15A-17B and 21A-B of Iba show the polarization compensator having birefringence varies with regions and each region having a predetermined birefringence depending on the angle  $\theta$  for improving viewing angle-dependence (col. 11, lines 49-57; col. 11, line 66 – col. 13, line 21). It is apparent to one of ordinary skill in the art that the different birefringences of different regions are determined based on the variance of the incident angle  $\theta$  of the input light (Fig. 13). As apparent from Fig. 13, the variance of the polarization of the incident light at axis B (light substantially perpendicular to the surface of the LC panel 51) is less than that at axis A (light obliquely incident or inclined to the surface of LC panel). Therefore, the reduction of the variance at location axis B is different than that at the location axis A. It would have been obvious to a person of ordinary skill in the art to determine the birefringence for each region of the phase compensator in order to obtain uniform contrast and good viewing angle.

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It is not agreed with Applicant's remarks that in the phase plate of Iba the birefringence varies radially from an arbitrarily selected center birefringence because arbitrarily selected birefringences could not improve the contrast and viewing angle of the liquid crystal panel, as apparent to one of ordinary skill in the art. See Iba, col. 2, lines 39-45; col. 3, lines 21-36.

Claims 2, 5, 6, 8-10, 12-14, 16, 19, 22, 23, 25-27 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iba in view of Chigrinov et al , Yamamoto et al, Kizaki et al (cited by Applicant), Fergason and Ootaki (cited by Applicant).

These claims are obvious variants of the projection system of Iba by employing a) a polarization compensator in a rectangular matrix , b) the compensator being a transmissive LCD, c) the compensator being built into the LC panel, d) the compensator being located at an aperture stop or at one of the entrance pupil and exit pupil, e) the compensator being electrically controlled, f) a feedback mechanism to adjust the birefringence of the compensator, g) the birefringence of the compensator being adjustable over time, h) a plurality of LC panels. However, the features a)-h) are known as evidenced by the above references, e.g. a) by Iba, col. 5, lines 35-42' b) by Kizaki and Yamamoto, c) by Chigrinov's Figs. 1 and 2, d)by Fergason, e) by Kizaki and Yamamoto, f) by Kizaki, g) by Yamamoto, h) by Ootaki. To employ the above features in the projection system of Iba would have been an obvious matter of design choice which depends on the desired objective among fabrication cost, good contrast, weight, compactness and complexity of the driving circuitry.

Applicant's arguments have been fully considered but they are not persuasive for the above-mentioned reasons.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication should be directed to Tai Duong at telephone number 703 308-4873.

TD  
TVD  
9/03



**KENNETH PARKER  
PRIMARY EXAMINER**